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Lawrence Livermore National Laboratory's Sensor Technologies for Unmanned Vehicle Deployment

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The threat to U.S. troops posed by weapons of mass destruction has prompted the civilian and government research communities to examine ways to quickly detect the presence of these weapons on the battlefield. The desire to achieve this goal in a manner that limits the risk to U.S. personnel has provided the impetus to deploy sensor systems on unmanned vehicles, both airborne and ground based. Lawrence Livermore National Laboratory (LLNL), in collaboration with industry, academia, and other government agencies, has developed and demonstrated complete, integrated remote sensing and unattended monitoring systems capable of being fielded on unmanned vehicles for the purpose of the detection of weapons of mass destruction. In this paper we will discuss several LLNL sensor systems including a cross-dispersion infrared spectrometer which has been designed for the remote sensing of airborne chemicals, a wide area monitoring system, air-delivered ground sensors, and point detection systems.

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